

COUNTER-BORED FILM-COOLING HOLES

ABSTRACT OF THE DISCLOSURE

A turbine component includes a plurality of film-cooling holes formed in a region of the component to be cooled, the cooling holes having specified diameter, each hole at an exit thereof formed with a counter-bore of predetermined depth; the component having a coating applied thereto at least in the region, wherein the counter-bore provides an area for excess coating material to accumulate without reducing the specified diameter. A method of maintaining cooling efficiency of film-cooling holes in a turbine component where the film-cooling holes have specified diameters and the turbine component has a protective coating therein comprising: a) before coating, forming each film-cooling hole with a counter-bore and an exit end of the film-cooling hole; and b) spraying the coating onto the turbine component at least in areas surrounding the film-cooling holes such that excess coating material accumulates in the counter-bore without reducing the specified diameter of the cooling holes.